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A.D. 1859, 5th SEPTEMBER. N° 2026.

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S P E C I F I C A T I O N

OF

WILLIAM LOUIS EARLE.

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APPARATUS FOR THE COMBUSTION OF  
SMOKE, &c.

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L O N D O N :

PRINTED BY GEORGE E. EYRE AND WILLIAM SPOTTISWOODE,

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1860.







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**Apparatus for the Combustion of Smoke, &c.**

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*(This Invention received Provisional Protection only.)*

**PROVISIONAL SPECIFICATION** left by William Louis Earle at the Office of the Commissioners of Patents, with his Petition, on the 5th September 1859.

I, WILLIAM LOUIS EARLE, of Alfred Place, Bedford Square, in the County  
5 of Middlesex, Gentleman, do hereby declare the nature of the said Invention for "IMPROVEMENTS IN APPARATUS FOR PROMOTING THE COMBUSTION OF SMOKE & GASES ARISING FROM FUEL," to be as follows:—

My Invention of improvements in apparatus for promoting the combustion of smoke and gases arising from fuel in ignition, consists of a fire clay or  
10 other body perforated in a particular manner, so that the smoke, gases, and air are severally divided into minute jets or streams, and meet and become intimately mixed at the moment of their escape from the perforated body into a combustion chamber or flue, no mixture of the air and gases admitted through such perforations taking place until emerging therefrom and into  
15 ample space to permit of and insure the combustion. I dispose this perforated body or apparatus behind the fire, or in other position according to the arrangement or kind of furnace to which it is applied, so as to intercept the smoke and other gases arising from combustion in their passage from the fire to the chimney or other escape. In its form I prefer this perforated body to  
20 be of a wedge-shape, that is to say, in its end view or section parallel to the same it is of the form of a right-angled triangle, and having one series of perforations entering and passing through the bodies at right angles to the other series of perforations, therefore each series of perforations enter at separate

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*Earle's Impts. in Apparatus for Promoting the Combustion of Smoke, &c.*

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sides of the triangle, and both series open to the incline or hypotenuse which forms the point of mixture and ignition of the air, gas, and smoke in the combustion chamber or flues of the furnace in which the apparatus is placed. I have adopted the triangle or wedge form as being the best suited for the purpose, as the air is readily conveyed to the entrance of the perforations in a 5 body of that form to the one surface or side of the triangle, while smoke is conveyed to the other side, and such side may form the surface immediately adjoining the furnace. This triangle or wedge form may, however, be varied, so long as the emission and mixture of the air, smoke, and gases takes as described. Moreover, by varying the form of the triangle, and consequently 10 the area of its sides, they may bear some relative proportion to the quantities of air and smoke and gases to enter thereat. I sometimes enclose the combustion chamber or space immediately behind the perforated body by a surface of fire clay, adding a perforated partition through which the heat and flame, or it may be the still unconsumed gases and air pass in their course to the 15 flues; this addition insures the heat of the combustion chamber being always sufficient to insure the combustion of the gases.

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Printers to the Queen's most Excellent Majesty. 1860.